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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 10-255249

(43)Date of publication of application : 25.09.1998

(51)Int.Cl. G11B 5/66

G11B 5/09

G11B 5/39

H01F 10/16

(21)Application number : 09-054674

(22)Date of filing : 10.03.1997

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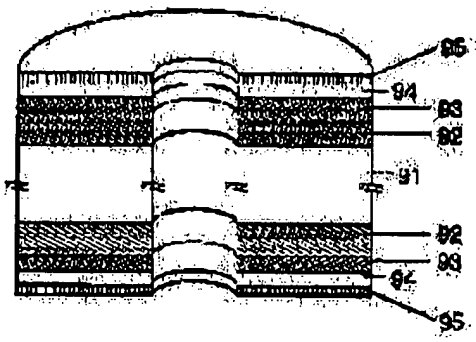
(54) MAGNETIC STORAGE MEDIUM AND MAGNETIC STORAGE DEVICE



(57)Abstract:

PROBLEM TO BE SOLVED: To achieve a storage density of at least 5Gbits per square inch by constituting the magnetic layer of a magnetic storage medium being reproduced by a magnetoresistive magnetic head using a mixture of a non-magnetic compound consisting of an oxide and a nitride and a magnetic material mainly consisting of Co and Sm and setting the molar ration of Sm to Co to a value within a specific range.

SOLUTION: A non-magnetic plating layer 92 consisting of Ni-P is formed on the surface of a substrate 91 using Al-Mg alloy. In 15mTorr argon gas atmosphere, the temperature of the substrate is set

to a room temperature and a magnetic layer 93 where a silicon oxide is added to Co-20at.% Sm is formed to 25nm thickness by an RF magnetron sputtering. In this case, the molar ratio of Sm to Co in the magnetic layer is set to the range of 0.1-0.4. Then, the molar ratio of silicon oxide to Co is set to a range of 0.6-1.0. Finally, a carbon protection layer 94 is formed by a DC magnetron sputtering.

LEGAL STATUS

[Date of request for examination]	10.03.1997
[Date of sending the examiner's decision of rejection]	
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]	
[Date of final disposal for application]	
[Patent number]	2918199
[Date of registration]	23.04.1999
[Number of appeal against examiner's decision of rejection]	
[Date of requesting appeal against examiner's decision of rejection]	
[Date of extinction of right]	